



## EU Type Examination Certificate CML 22ATEX2377X Issue 0

- 1 Equipment intended for use in Potentially Explosive Atmospheres Directive 2014/34/EU
- 2 Equipment **Reflect**
- 3 Manufacturer **Pulsar Process Measurement Limited**
- 4 Address **Cardinal Building, Unit 5, Lancaster Way,  
Enigma Commercial Centre, Earls Colne Business Park,  
Sandys Road, Malvern, Earls Colne,  
Worcestershire, WR14 1JJ, Essex, CO6 2NS,  
United Kingdom United Kingdom**
- 5 The equipment is specified in the description of this certificate and the documents to which it refers.
- 6 CML B.V., Chamber of Commerce No 6738671, Koopvaardijweg 32, 4906CV Oosterhout, The Netherlands, Notified Body Number 2776, in accordance with Article 17 of Directive 2014/34/EU of the European Parliament and of the Council, dated 26 February 2014, certifies that this equipment has been found to comply with the Essential Health and Safety Requirements relating to the design and construction of equipment intended for use in potentially explosive atmospheres given in Annex II to the Directive.  
The examination and test results are recorded in the confidential reports listed in Section 12.
- 7 If an 'X' suffix appears after the certificate number, it indicates that the equipment is subject to conditions of safe use (affecting correct installation or safe use). These are specified in Section 14.
- 8 This EU Type Examination certificate relates only to the design and construction of the specified equipment or component. Further requirements of Directive 2014/34/EU Article 13 apply to the manufacture of the equipment or component and are separately certified.
- 9 Compliance with the Essential Health and Safety Requirements, with the exception of those listed in the confidential report, has been demonstrated through compliance with the following documents:

EN IEC 60079-0:2018

EN 60079-11:2012

- 10 The equipment shall be marked with the following:



II 1 G

Ex ia IIC T4 Ga

Tamb = -40°C to +80°C

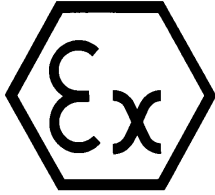


II 1 D

Ex ia IIIC T100°C Da

Tamb = -40°C to +80°C





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## 11 Description

The Reflect is a two-wire DC powered level measurement sensor utilising radar technology. The sensor is housed in a non-metallic enclosure with integral two core cable which connects, via a suitably certified barrier, to control equipment located in the safe area. The enclosure incorporates a threaded boss which allows the equipment to be mounted on a suitable bracket or flange, and LED indicators mounted in the enclosure wall.

Intrinsic safety is achieved by connecting to the non-hazardous area via an intrinsically safe interface device, and by encapsulation of the electronics and sensor.

The equipment has the following safety description:

U<sub>i</sub> = 28V  
I<sub>i</sub> = 162mA  
P<sub>i</sub> = 0.85W  
C<sub>i</sub> = 0  
L<sub>i</sub> = 0

## 12 Certificate history and evaluation reports

Issue	Date	Associated report	Notes
0	22 Sep 2022	R15397A/00	Issue of prime certificate

Note: Drawings that describe the equipment or component are listed in the Annex.

## 13 Conditions of Manufacture

The following conditions are required of the manufacturing process for compliance with the certification.

- i. Where the product incorporates certified parts or safety critical components, the manufacturer of the product defined on this certificate shall continually monitor these parts/components for any modifications introduced by the manufacturer(s) of these constituent parts. If the manufacturer of any constituent part introduces any changes which affect the compliance of the certified product that is the subject of this certificate, the manufacturer is required to have this certificate updated.

## 14 Specific Conditions of Use (Special Conditions)

The following conditions relate to safe installation and/or use of the equipment.

- i. Under certain extreme circumstances, the non-metallic parts incorporated in the enclosure of this equipment may generate an ignition-capable level of electrostatic charge. Therefore, the equipment shall not be installed in a location where the external conditions are conducive to the build-up of electrostatic charge on such surfaces. This is particularly important if the equipment is installed in a zone 0 location. In addition, the equipment shall only be cleaned with a damp cloth
- ii. When installing the equipment, the installer shall consider the length of the integral cable attached to the equipment, in addition to any externally installed cable. The integral cable shall be considered to have parameters of 200pF/m, and 1μH/m or 30μH/Ω

## Certificate Annex

**Certificate Number** CML 22ATEX2377X  
**Equipment** Reflect  
**Manufacturer** Pulsar Process Measurement Limited



The following documents describe the equipment or component defined in this certificate:

### Issue 0

Drawing No	Sheets	Rev	Approved date	Title
D-804-1427-C	1 of 1	C	22 Sep 2022	Reflect block diagram Ex ia /IS
D-804-1431-C	1 of 1	C	22 Sep 2022	Pulsar Reflect-IS sensor, Exia, IECEx, ATEX, UKEx haz. area label
D-804-1421-D	1 of 1	D	22 Sep 2022	Pulsar Reflect General Assembly Drawing
D-804-1445-B1	1 of 2	B	22 Sep 2022	Reflect CPU V1 Circuit
D-804-1445-B2	2 of 2	B	22 Sep 2022	Reflect CPU V1 Circuit
A3010177C	1 of 1	1.2	22 Sep 2022	Reflect CPU haz. Area BOM
D-804-1446-A	1 of 3	A	22 Sep 2022	Reflect CPU PCB, A-301-0177-C, top silk screen and top copper
D-804-1446-A	2 of 3	A	22 Sep 2022	Reflect CPU PCB, A-301-0177-C, bottom silk screen and bottom copper
D-804-1446-A	3 of 3	A	22 Sep 2022	Reflect CPU PCB, A-301-0177-C, ground plane and power plane negatives
D-804-1447-A	1 of 1	A	22 Sep 2022	Reflect LEDs board circuit. Haz. area
A3010174A	1 of 1	1.0	22 Sep 2022	Reflect LED board haz. Area BOM
D-804-1448-A	1 of 1	A	22 Sep 2022	Reflect LEDs PCB A-301-0174-A, silkscreens and bottom copper